10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Myosin IIA Heavy Chain (Ser-1916), Phosphospecific Antibody

Catalog # AN1845

Product Information

Application	WB
Primary Accession	P35579
Host	Rabbit
Clonality	Rabbit Polyclonal
Isotype	IgG
Calculated MW	226532

Additional Information

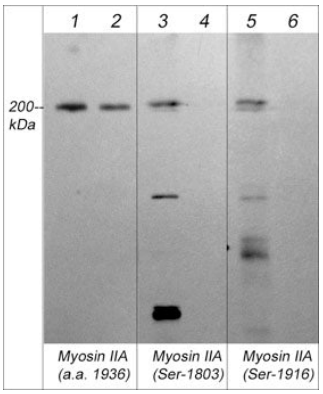
Gene ID	4627
Other Names	NMHC-IIA, MYH9, myosin heavy chain
Target/Specificity	on-muscle myosin II is an actin-based motor protein essential to cell motility, division, migration, adhesion and polarity. This myosin forms a hexameric complex comprised of two heavy chains (NMHC-II), two essential light chains, and two regulatory light chains (RLC). In vertebrates, there are three NMHC-II isoforms (NMHC-IIA, NMHC-IIB, and NMHC-IIC), which exhibit distinct patterns of expression in cells and tissues. Regulation of NMHC-II activity occurs through RLC and HC phosphorylation. RLCs are phosphorylated at Thr-18 and Ser-19, which activates myosin II motor activity and promotes filament stability. By contrast, PKC phosphorylation of Ser-1/Ser-2 and Thr-9 in RLC may decrease activated myosin II interaction with actin. Several kinases phosphorylation NMHC-II isoforms directly. TRPM7 phosphorylates Thr-1800, Ser-1803, and Ser-1808, which reduces NMHC-IIA incorporation into the actin cytoskeleton. PKC phosphorylates NMHC-IIA on Ser-1916 and NMHC-IIB on multiple tailpiece serines leading to inhibition of filament assembly. Casein kinase II phosphorylates NMHC-IIA on Ser-1943 and increases disassembly of NMHC-IIA filaments.
Dilution	WB~~1:1000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Anti-Myosin IIA Heavy Chain (Ser-1916), Phosphospecific Antibody is for research use only and not for use in diagnostic or therapeutic procedures.
Shipping	Blue Ice

Background

on-muscle myosin II is an actin-based motor protein essential to cell motility, division, migration, adhesion

and polarity. This myosin forms a hexameric complex comprised of two heavy chains (NMHC-II), two essential light chains, and two regulatory light chains (RLC). In vertebrates, there are three NMHC-II isoforms (NMHC-IIA, NMHC-IIB, and NMHC-IIC), which exhibit distinct patterns of expression in cells and tissues. Regulation of NMHC-II activity occurs through RLC and HC phosphorylation. RLCs are phosphorylated at Thr-18 and Ser-19, which activates myosin II motor activity and promotes filament stability. By contrast, PKC phosphorylation of Ser-1/Ser-2 and Thr-9 in RLC may decrease activated myosin II interaction with actin. Several kinases phosphorylation NMHC-II isoforms directly. TRPM7 phosphorylates Thr-1800, Ser-1803, and Ser-1808, which reduces NMHC-IIA incorporation into the actin cytoskeleton. PKC phosphorylates NMHC-IIA on Ser-1916 and NMHC-IIB on multiple tailpiece serines leading to inhibition of filament assembly. Casein kinase II phosphorylates NMHC-IIA on Ser-1943 and increases disassembly of NMHC-IIA filaments.

Images



Western blot image of human A431 cells stimulated with calyculin A (100 nM, 30 min). The blots were untreated (lanes 1, 3 & 5) or treated with lambda phosphatase (lanes 2, 4 & 6), and probed with rabbit polyclonals Myosin IIA Heavy Chain (a.a. 1936-1950) (lanes 1 & 2), Myosin IIA Heavy Chain (Ser-1803), phospho-specific (lanes 3 & 4) or Myosin IIA Heavy Chain (Ser-1916) phospho-specific (lanes 5 & 6).